PHOTOGRAPHY:
TRICKS OF THE TRADE

Difficult
Image Exposure
Problems

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Agenda for the evening

- Welcome and introductions
- Overview of general problems in photography
- Components of exposure
- Review of the histogram as an exposure tool
- Difficult high light issues
  - Bright sky
  - Back lighting
- Difficult low light issues
- Mixed light issues - shadows
- Wrap-up by 8 PM

Goals for "Tricks of the Trade"

- NOT show you the way you should work
- Demonstrate and discuss specific photography issues
- Discuss the rationale for my choices
- Give opportunity to discuss how to apply ideas to ***your*** photography
- Ultimately, improve your photography

What ruins a photo?

- Unintentionally blurred image
  - Out of focus
  - Subject moves
  - Camera shake
- Improper exposure
  - Over-exposure
  - Under-exposure (sometimes fixable in PP)

  } The histogram may help

- Poor composition
  - Lack of subject, foreground, background
  - Complicating / distracting components

Learning Objectives

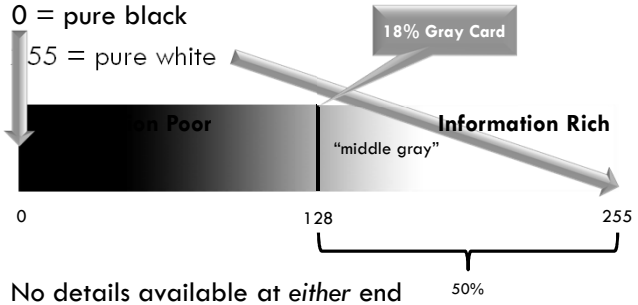
At the end of this session, you will be able to:

- Explain the role of the histogram in photography
- Identify complex or difficult light situations
- Use the exposure triangle to optimize capture
- Use the camera as a light meter / use exposure modes
- Use exposure compensation to alter camera settings
- Explore role of filters in difficult lighting
- Identify solutions for high, low, and mixed light conditions

Luminosity

Defined for every pixel (Red, Green, Blue)

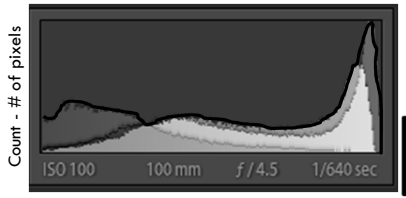
- Degrees of brightness (8 bit; 2^8; 256 levels)
- 0 = pure black
- 255 = pure white



No details available at *either* end

The Histogram

- Key to exposure and contrast
- Shoot to the right
- Don't blow-out the whites



8-bit JPEG files are capable of 2^8 = 256 tones

Red – Cyan
Green – Magenta
Blue – Yellow

Luminosity (brightness) value
0 - 255

0 = black (no resolution, detail)
255 = white (no resolution, detail)
1 – 254 = shades of gray

Chimping in the field

- Make sure image was captured
- Check the general composition
- Check the focus
- Determine the best exposure for your image
  - The histogram!

The myth of a bell-shaped curve

- A statistically 'normal' distribution is a bell-shaped curve
  - Mean, median, and mode are equal
  - About 68% of values are within 1 standard deviation
  - About 95% of values are within 2 standard deviations
  - About 99% of values are within 3 standard deviations
- The bell-shaped curve describes a 'normal' population
- Photographs are not 'normal' so a bell-shaped curve is not a goal in image capture
- There is no ideal photographic histogram

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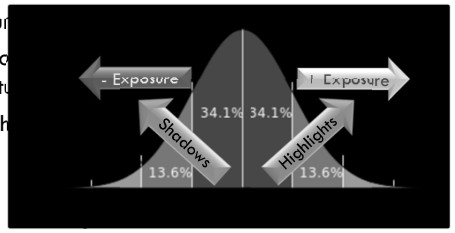


In Camera and Post-processing

- Histograms are everywhere!
- Luminosity and RGB graphs in camera
- Basic image control in Lightroom and Cameraw
- Grid and Loupe views in Library module in Lightroom
- Develop module in Lightroom
- Tone curve in Lightroom / Photoshop

Exposure Control Triangle

- Three elements control exposure
- ISO sets sensor sensitivity
- Aperture controls amount of light
- Shutter speed controls duration of exposure

Any change in one factor requires an equal and opposite sum change in the other two factors

One "stop" or EV (exposure value) implies a doubling or halving of exposure.

Exposure Control

- Shutter speed – How long is the exposure?
  - Motion blur
- Aperture – How much light gets to the sensor?
  - Depth of field
- ISO – How sensitive is the sensor?
  - Digital noise (grain)

Use your camera histogram

- "Shoot to the right"
- No blown-out whites
  - Watch for 'blinkies'
- May have some clipped blacks
  - Handle in post-production editing
- Negative EC for "blown" whites
- Positive EC for blacks

Post-processing / Editing

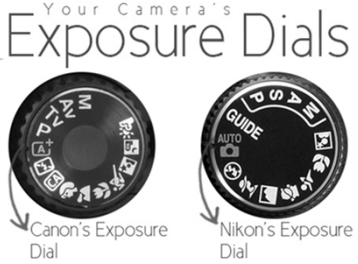
- Exposure / luminosity – intensity of light
- Contrast / tonality – range of luminosities
  - White & black points, highlights, shadows
- Saturation (intensity of color)
- White balance
- Level and crop
- Sensor dust
- Distractions
- Sharpen
- Digital noise reduction

This is where the histogram helps.

Camera Exposure Modes

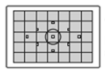
- ~~Auto / Program~~
- Aperture priority (A, Av)
- Shutter priority (S, Tv)
- Manual

Difficult Lighting



Camera Metering Modes

- Evaluative / Matrix
- Partial (Canon)
- Spot
- Center-weighted



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Filter Considerations

- UV or Haze filter
  - Controversial – lens protection / light effect
- Circular Polarizing Filter (CPL)
  - **Only effect that cannot be done in post-processing!**
- Graduated Neutral Density (Grad)
  - Soft or hard edge transition
  - Usually 2-3 stops reduction
- Neutral Density
  - Fixed 2 or 3 stops reduction
  - Variable 1-8 stops reduction
- Color correction – not needed with post-production

Difficult exposure situations

- Bright sky – either clear blue or overcast
- Harsh mid-day light
- Back-lighted subject
- Shooting into the sun (sunrise/set, silhouette)
- Shooting into the sky
- Dark conditions (interior, dense shade)
- Harsh shadows (variable light)

Filters

- **Circular polarizing lens – CPL (filter)**
  - Only filter that cannot be replicated in editing
  - Size to maximum lens diameter
  - Adapters to smaller lenses
- **Neutral density filter(s)**
  - Fixed or variable
  - Round or rectangular with mount
- **Graduated neutral density filter(s)**
  - Rectangular (only) with mount
- Specialty and color correction filters
- UV / haze filter controversies

- ✓ Blue skies with clouds
- ✓ Foliage
- ✓ Reflections – water / shiny surfaces
- ✓ Best when light is right angle to lens
- ✓ Careful with wide-angle lenses

Shooting into the sky

- Consider very wide-angle lens for drama

Dark conditions

Harsh shadows

Difficult Exposure Summary

- If reflections (minimizing them) and colors are most important, control the incoming light by using a filter.
- If motion effects are a priority, set your shutter speed first.
- If low noise is vital, set a low ISO and balance the other factors from there.
- If depth of field is critical, give preference to aperture.

Jason D. Little

Exposure Key Points

- Histogram is your primary exposure guide in-camera
- Expose to the right but don't blow-out the whites
- Histogram is your primary guide to exposure, white point, black point, highlights and shadows control
- Use the most effective metering mode for your image
- Use local adjustments in post-processing (gradient & radial filters, dodge & burn, etc.) to create image depth

Good to Great Photographs

- Good photographs
  - Proper exposure
  - Sharp focus
  - Nice composition
  - Good subject
- Great photographs
  - Emotional impact / visual tension
  - Creativity and style
  - Feeling and emphasis
  - Seeing and understanding
  - Unique perspective / lighting